

# Work Order ID 61812

Tuesday, September 07, 2010 12:43:10 PM

Page 1

Item ID: D4102-2

Accept

Revision ID:

Item Name: Shim

Start Date: 9/7/2010 Start Qty: 10.00

Required Date: 10/13/2010 Req'd Qty: 10.00

Reference:

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date: 10-9-01

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D4102

B

100

Cut blanks as per folio

0.00



Bandsaw

Memo

0.00

Jeaspa Bandsaw

4.950" long

amk 10/09/26

12 8

110

0.00



HAAS 1

Memo

0.00

HAAS CNC vertical machine #1

MILL AS PER DWG AND FOLIO FA945

FOLIO REV: AA

DWG REV: B

DEBURR

BF 10/02/26

10 0 10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 61812**

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Page 2

Item ID: D4102-2

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Revision ID:

Item Name: Shim

Start Date: 9/7/2010 Start Qty: 10.00

Required Date: 10/13/2010 Req'd Qty: 10.00

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

120

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Memo

0.00

Quality Control

□□

SF 10/02/24

12

0

130

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

H.A 10/09/30

11

0

140

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

BR 10-9-30

11

0

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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**NOTE:** Date & initial all entries

**Work Order ID 61812**

Tuesday, September 07, 2010 12:43:10 PM

Page 3

Item ID: D4102-2

Accept

Setup Start

Revision ID:

Stop

Item Name: Shim

Start Date: 9/7/2010 Start Qty: 10.00

Cust Item ID:

Required Date: 10/13/2010 Req'd Qty: 10.00

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

150

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

7 M 10/09/30

11 0

160

Identify as per dwg &amp; Stock Location: 127

0.00



Packaging

Memo

0.00

Packaging

C 10/9/30 (11)

170

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/10/10 MF 10-9-30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Tuesday, September 07, 2010 12:43:13 PM

Page 1

Work Order ID: 61812



Parent Item: D4102-2



Parent Item Name: Shim

Start Date: 9/7/2010

Required Date: 10/13/2010

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A NEW ISSUE 10-07-05 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B0.250X04.00 0		Purchased	No				f	15.8670	0.042	0.442105			



6061-T6 Bar .250 x 4.00

Location

MAT

114608

Loc Qty

15.866978

15.866978

Loc Code

5.197

cmk 10/09/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



DART AEROSPACE LTD		Work Order: 61812
Description: SHM		Part Number: D4102-2
Inspection Dwg: 84102	Rev: B	Page 1 of 2

### FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
356	±.010	.364	✓		8F-12	VERN
490	"	.497	✓		"	
.965	"	.970	✓		"	
1.10	±.030	1.114	✓		"	
1.344	±.010	1.354	✓		"	
2.587	"	2.595	✓		"	
2.90	±.030	2.910	✓		"	
3.325	±.010	3.332	✓		"	
3.370	"	3.379	✓		"	
3.505	"	3.513	✓		"	
3.574	"	3.585	✓		"	
4.75	±.030	4.750	✓		"	
4.234	±.010	4.239	✓		"	
3.940	"	3.936	✓		"	
3.770	"	3.773	✓		"	
3.58	±.030	3.580	✓		"	
3.418	±.010	2.418	✓		"	
2.315	"	2.317	✓		"	
2.290	"	2.292	✓		"	
1.534	"	1.534	✓		"	
1.18	±.030	1.183	✓		"	
1.125	±.010	1.123	✓		"	
.718	"	.720	✓		"	

Measured by: JF
Date: 10/09/24

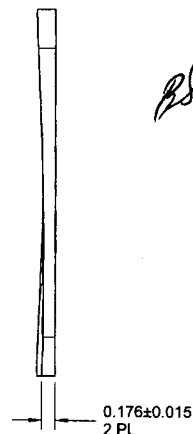
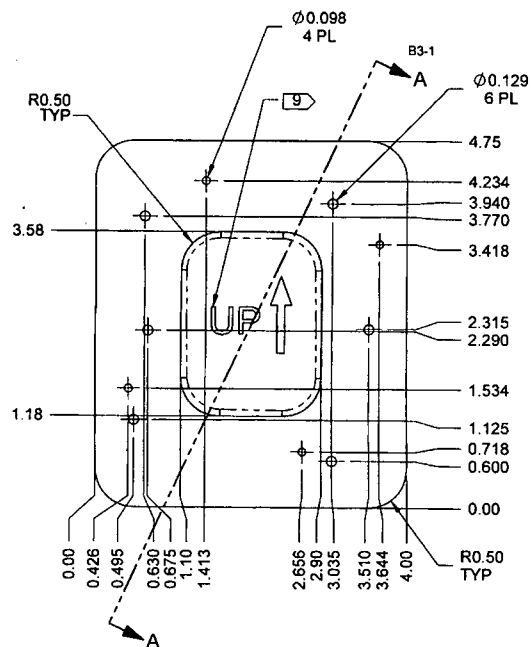
Audited by: H.A
Date: 10/09/30

Preliminary Approval:
Date:

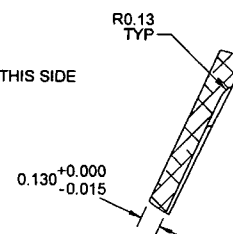
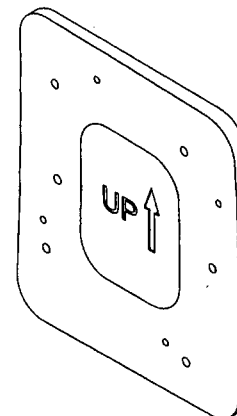
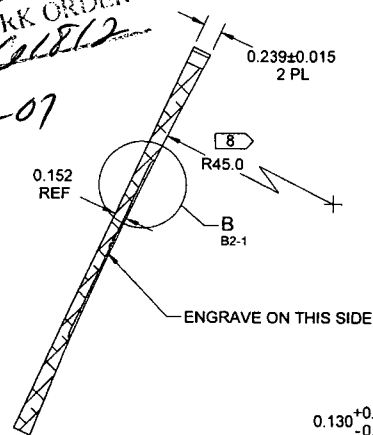
Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15





SHOT COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. *61812*  
*PS10-9-07*



SECTION A-A D6-1

DETAIL B C3-1  
SCALE 2X

D4102-1 SHIM



RELEASED  
2010-08-23  
NO

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR  
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221  
PER DART SPEC. M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4102-1" & B/N USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.30 lbs
- 8) SURFACE FINISH MINIMUM 250 MICROINCH
- 9) ENGRAVE "UP & ARROW" TO A DEPTH OF MAXIMUM 0.020 IN THIS LOCATION WITH A TOOL TIP RADIUS OF 0.063

B	RE-DESIGN D4102-1/2/3 (ZN B4-1, B4-2, B4-3)	RF	10.08.06
A	NEW ISSUE	RF	10.06.07
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D4102	SHEET 1 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SHIM	NTS
DATE	10.08.06	COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. NO IT IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIES OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

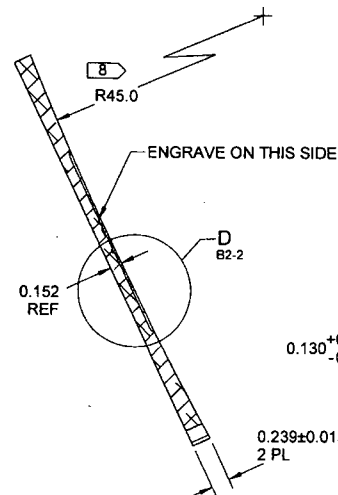
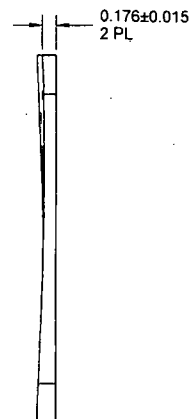
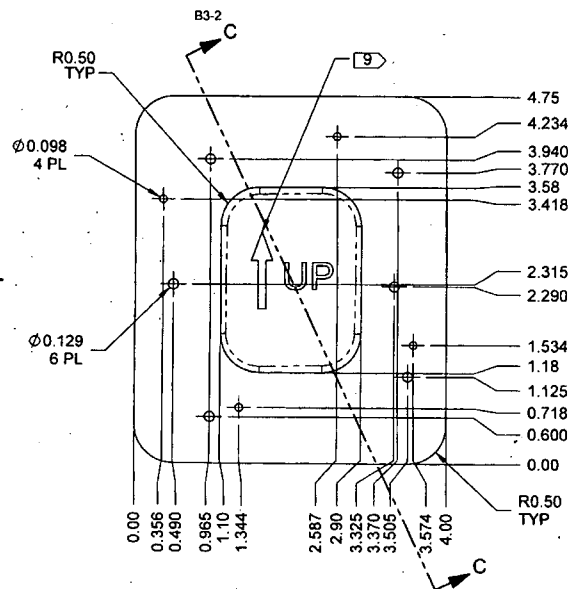
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

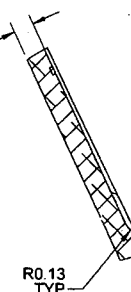
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



SECTION C-C D7-2



DETAIL D C3-2  
SCALE 2X

D4102-2 SHIM



NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR  
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221  
PER DART SPEC. M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4102-2" & B/N USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.30 lbs
- 8) SURFACE FINISH MINIMUM 250 MICROINCH
- 9) ENGRAVE "UP & ARROW" TO A DEPTH OF MAXIMUM 0.020 IN THIS LOCATION WITH A TOOL TIP RADIUS OF 0.063

*W/O 41912*

RELEASED  
2010-08-23

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO. D4102	REV. B
MFG. APPR.	<i>[Signature]</i>	SHEET 2 OF 3	
APPROVED	<i>[Signature]</i>	TITLE SHIM	SCALE NTS
DE APPR.	<i>[Signature]</i>	<small>COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	
DATE	10.08.06		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

8 7 6 5 4 3 2 1

D

C

B

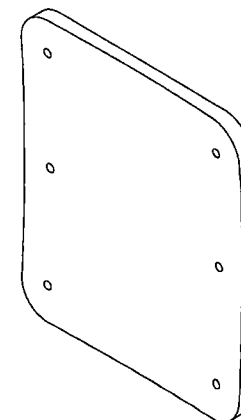
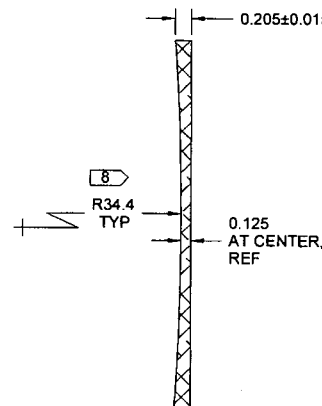
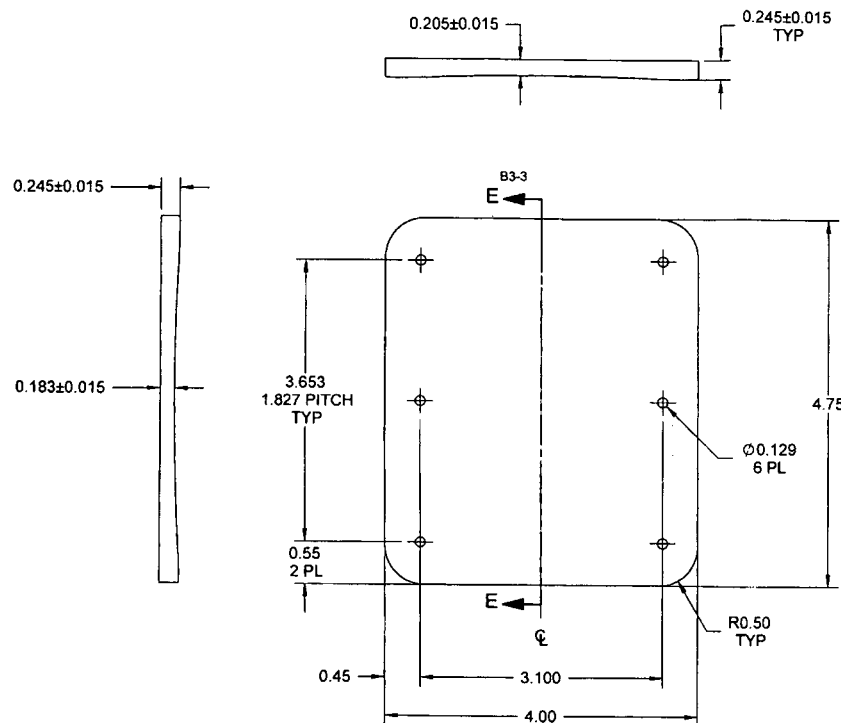
A

D

C

B

A



**D4102-3 SHIM**



**NOTES:**

- 1) MATERIAL: 6061-T6/T651/T6511/T62 ALUMINUM BAR  
 QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
 OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
 OR ASTM B211 OR ASTM B221  
 PER DART SPEC. M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4102-3" & B/N USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.31 lbs
- 8) SURFACE FINISH MINIMUM 250 MICROINCH

*WLO 4/8/17*

**RELEASED**  
 2010-08-23  
 JRP

DESIGN	RF	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	<b>D4102</b>	SHEET 3 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	<b>SHIM</b>	NTS
DATE	10.08.06	<small>COPYRIGHT © 2010 BY DART AEROSPACE LTD          THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS          NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT          WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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